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ABSTRACT
The purpose of this paper is to alert elementary and secondary social studies teachers to certain new approaches to projects and materials in environmental education in the context of education in general. It is also a guide to the use of other available programs. Selective rather than complete, the paper offers a sampling of programs social studies teachers will find provocative. Categories covered include: 1) programs which encourage individual inquiry and allow the child to explore and question; 2) projects emphasizing interaction between man and his environment, and the cultural patterns controlling man's perception of his environment; 3) programs using the local environment or community as an integral part of the study program, offering the direct involvement needed for learning "through" the environment; and, 4) programs emphasizing "man in society" --the study of values, and related political, social, economic, legal and ethical ideas. (EJW)

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ENVIRONMENTAL EDUCATION: SOCIAL STUDIES SOURCES AND APPROACHES

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Public Broadcasting Environment Center

A paper for the ERIC Clearinghouse for Social Science Education

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Review Series No. 1

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Foreword

Every organism functions within an environment. Man is no exception. But most organisms have only small influences on their surroundings that are beyond the reach of their own shade or burrow. Only man has developed the power to make great changes in his environment.

It is the sudden realization of the limits of that power which has frightened Americans these last few years. We cannot blow away the smog. There is no quick and easy way to clean up the streams and rivers. The bulldozer scar on the desert cannot be erased.

Education's response to the "environmental crisis" has been enormous. This wave of concern was preceded by two similar waves during this century. In the first, conservation and preservation were sometimes hard to distinguish. Protection of the last remnants of that magnificent inheritance, the public domain, caught the nation's imagination. In the second wave during the thirties, conservation was clearly "wise management." But generally each resource was dealt with separately and there was some confusion with "public works."

By the seventies the interdependence of each aspect of the environment on every other aspect is widely understood. Ecological approaches are extended from plants and animals to man and

society. If this wave of enthusiasm is to have more influence than the other two, teachers and coordinators need to draw on as much experience as they can. The urgency of the crisis demands boldness of educational action. The fundamental importance of the subject demands all the experience available.

Neither a natural science nor a social science approach is adequate in itself. Biologists emphasize ecology, but find that it is people who make the decisions which cause the pollution. Economists find that marginal disutility analysis works only part of the time. They need to understand the natural processes to know when to use it.

A very real educational issue revolves around the definition of environment. At one extreme people are concerned about the "natural environment": understanding natural processes well enough to deal with man's impact upon them, preserving examples of wilderness, optimum management of natural resources. At the other extreme people are concerned that children become sensitive to their total environment: observing everything around them, people as well as things, that they become responsive to the beauty and utility of the man-made as well as the natural surroundings. Most programs in environmental education fall somewhere between these two extremes.

Martha Henderson considers the whole range of meanings in the programs described below. We trust teachers interested in increasing or improving the environmental emphasis of their classes will find her interpretation and descriptions useful.

Nicholas Helburn
Director
ERIC Clearinghouse for Social Science Education

ENVIRONMENTAL EDUCATION:
SOCIAL STUDIES SOURCES AND APPROACHES

The purpose of this paper is to alert elementary and secondary social studies teachers to certain new approaches and materials in environmental education in the context of education in general. The list is selective rather than complete, a sampling of programs which social studies teachers will find provocative.

DEFINITIONS

A. N. Whitehead, in The Aims of Education, has stated:

> But for all your stimulation and guidance the creative impulse toward growth comes from within, and is intensely characteristic of the individual. Education is the guidance of the individual towards a comprehension of the art of life; and by the art of life I mean the most complete achievement of varied activity expressing the potentialities of that living creature in the face of its actual environment.[1]

Our environment is to a great extent ordered by our internal perceptions of it. Working over the subject recently, Frank F. Nicholls, James Aldrich, and I hammered out the following statement:

> Environmental education provides the experiences and opportunities for the student to appreciate the web of interrelationships of man and his environment. It is a reorientation of educational ideas which have never been thoroughly exploited in the past, rather than a new discipline. It is more process than content oriented.[2]

This definition represents a large order. But its achievement is closely related to the attainment of what many have considered to be the particular aims of social studies. The following statement of social studies aims, made at a 1968 conference in Mombasa, Kenya, reflects an amalgam of values held by African, American, and British educators:

> a) to create an awareness and an understanding of the evolving social and physical environment as a whole, its natural, man-made cultural and spiritual resources, together with the rational use and conservation of these resources for development;

> b) to develop a capacity to learn and to acquire skills, including not only the basic skills of listening, speaking, reading and writing, and of calculation, but also the skills of hand, together with the skills of observation, analysis and inference which are essential to the forming of sound judgment;
>
> c) to ensure the acquisition of that relevant knowledge which is an essential prerequisite to personal development as well as to a positive personal contribution to the betterment of mankind;
>
> d) finally, it is of the utmost importance to develop a sympathetic appreciation of the diversity and interdependence of all the members of the local community, and of the wider national and international community.[3]

OTHER CONSIDERATIONS

Taking these definitions and aims as base lines, what are some of the other aspects of useful and exciting environmental education materials involving social studies?

First, programs should help increase the individual's self-fulfillment by strengthening his skills and self-awareness. Neurophysiologists are finding increasing evidence that a child's activities help to build his brain's ability to gather and process information, and thus his ability to form ideas and concepts. "There is an inseparability of emotional, and cognitive factors."[4] All of this forms the means whereby a human biologically mediates with his environment.[5] Thus he learns "through" rather than "about" his environment.[6] The point is that the child's reasoning capacities will not be fully developed unless he is given an opportunity for individualized and independent work.

Second, the deepest needs of the individual, if properly nurtured, coincide naturally with those of society, including social uses of the environment:

> This idea is an empirical denial of the Freudian contention of necessary, intrinsic, built-in opposition between the needs of the individual and the needs of society and civilization. It just is not so. We now know something about how to set up the conditions in which the needs of the individual become synergic with, not opposed to, the needs of society, and in which they both work to the same ends. This is an empirical statement, I claim.[7]

Third, society is constantly changing. Education must equip the child to cope with constant change. Most commentators agree that we cannot build a better environment for ourselves until we change our values and our way of life, and reshape the socio-economic priorities of our national institutions.[8] In the past we have promoted material growth and championed laissez-faire principles in applying technology to our surroundings; we must now evolve a more restrained and purposeful long-range view of a world sustained in a kind of dynamic equilibrium. This change in values will be reflected in new life-styles, and new kinds of environmental management institutions, which must promote humanistic as well as scientific needs. Children and their teachers must be prepared for these radical changes.

Fourth, an integrated approach is fundamental. Students must learn to have a greater sense of themselves in the web of life and acquire a total systems approach to the problems of man and environment. We must all arrive at a sense of stewardship for "spaceship earth."

The considerations above have guided the selection of the following programs in environmental education for the attention of social studies teachers. A wide range of programs are grouped here into four categories, each program being described in more detail on a separate page.

I. <u>Some projects seem especially suited to encouraging individual inquiry and allowing the child to explore and question</u>. Presumably such materials will also help the teacher find new ways of bringing environmental issues into the classroom.

   A. National Environmental Education Development (NEED)
   B. Materials and Activities for Teachers and Children (MATCH Boxes, Children's Museum, Boston)
   C. People and their Environment (South Carolina)
   D. Environmental Studies project (ES)
   E. Report of the Conference of African Educators (The Local Market as a Focus of Activity)
   F. Mountain View Center for Environmental Education (Colorado)

II. Other programs help the child understand the interaction between man and his environment. An understanding of cultural patterns is vital to effective environmental education, for such patterns control our perception of our environment.

A. Families Around the World
B. Our Working World
C. Man: A Course of Study (MACOS)
D. Geography in an Urban Age (HSGP)
E. Anthropology Curriculum Study Project (ACSP)
F. Sociological Resources for the Social Studies (SRSS)
G. Simpolis

III. Field work is an essential ingredient of environmental studies, within the school or in the community. The programs mentioned above are often successful in simulating the environment, but many fail to send students out to experience it directly. In one sense, the format of these programs does not offer the kind of direct involvement needed for learning "through" the environment. A third category of programs featuresdirect use of local environment as an integral part of the study program, and therefore complement the other programs.

A. Committee on Public Education of the American Institute of Architects (COPE)
B. Environmental Education Program (Ann Arbor, Michigan)
C. Education for Survival: Concepts, Facts, Illustrations, Aids and Activities (New Jersey)
D. Curriculum Development Project on Environmental Studies of the (British) Schools Council (Wales, U. K.)
E. Boise Environmental Education Project (BEEP, Portland, Oregon)
F. Chicago Public High School for Metropolitan Studies (Metro)

IV. Values and ethics --programs in law, politics, and economics. It is through political-economic-legal activities that we can learn how to make the choices needed to manage controlled growth of our economy and technology, and build a better life for our-

selves. Obviously a number of the programs previously noted also belong in this category.

A. Program on Civic Education and Law (California)
B. ECON 12 (San Jose)
C. The Charles P. Schwartz Citizenship Project (Graduate School of Education, University of Chicago)
D. Population Education
E. Spaceship Earth Curriculum Project

Many of the programs noted could be coordinated with each other around a local theme. For example, the BEEP or Metro projects, which utilize the community for learning, could make use of units from many of the other projects. In many cases local schools could find help in adapting a geography or planning course concerning a city other than their own to their particular needs. The League of Women Voters, Community Action programs, or Model Cities Programs might locate experts willing to collaborate on school programs. Many projects noted by the American Institute of Architects describe how planners and architects have worked in close cooperation with schools. College and university students can also work with them. With this sort of cooperative endeavor, a total program could be developed across disciplines, which would familiarize students with their world and help them to effect changes in it.

Intelligent action to improve the quality of the environment requires the collaboration of the natural and social sciences. On the secondary level, curriculum projects sponsored by individual disciplines have packaged their materials to facilitate multi-disciplinary approaches. Several science programs are deliberately including social and humanistic aspects in their new materials. At the elementary level, teachers will find that a number of new science programs designed for "inquiry" teaching fit in well with the points of view expressed above. Teachers should note the establishment of a new Environmental Education Section in the ERIC Clearinghouse for Science and Mathematics Education at Ohio State University, 1460 West Lane Avenue, Ohio. Collaboration between the sciences and the arts is less common, although the COPE-AIA projects are good examples.

In environmental education a fundamental need is for synthesis, for a whole approach to man and his environment which deeply involves the individual.

With the above the other similar programs as guides, we hope that all social studies teachers and their students will explore the possibilities of the world around them with increased confidence in their own imaginations. Teacher-student collaboration is the keystone of this style of education; with it we can begin to make our "island earth" a better place.

The author gratefully acknowledges the assistance of James L. Aldrich, Conservation Foundation, and Madison E. Judson, Public Broadcasting Environment Center.

DETAILED COMMENTS ON PROJECTS

I. Some projects seem especially suited to encouraging individual inquiry and allowing the child to explore and question.

A. National Environmental Education Development (NEED)

1. A National Park Foundation Program administered by the National Park Service.
2. Field testing to date has taken place principally at 5th and 6th grade levels, but also at 3/4 and 7/8; interdisciplinary materials for 3-8 are in press; K-2, 9-12 are being developed.
3. Materials: systems and interpretive materials combining effective educational techniques and keying the program into existing curricula in all subject areas.
4. Information available from: Office of Environmental Interpretation, National Park Service, U.S. Department of the Interior, Washington, D.C. 20240. Materials for grades 3-8 will be available January 1971 from Silver Burdette Company, a division of General Learning Corporation, 250 James Street, Morristown, New Jersey 07960.
5. Materials need fuller development but the program is exciting. Environmental awareness is introduced into all subject areas and provides pre-site (classroom), on-site (environmental school), and post-site (classroom) data or experiences.

> "Materials are designed around a conceptual framework of big ideas. Materials are organized around what have been called environmental strands, qualities or themes that cut through all environments --physical, cultural and personal. Themes are variety and similarities, patterns, interaction and interdependency, continuity and change, adaptation and evolution."

B. Materials and Activities for Teachers and Children (MATCH)

1. Children's Museum, Boston, Massachusetts, under a grant from the U.S. Office of Education.
2. Primary through grade 6. Subjects noted below are in multimedia kits, each of which contains materials for 30 children for 2-4 weeks. They can be circulated within the school system.
3. Materials:

   Grades 3-5 The City Kit

   5-6 Japanese Family Kit

   5-6 A House of Ancient Greece Kit

   All Ages: Basic Camera Kit

   Grade 5 and over, also teachers:

   Basic Cardboard Carpentry Tool Kit

   Complete Cardboard Carpentry Tool Kit
4. Available from: American Science and Engineering, 20 Overland Street, Boston, Massachusetts 02215; microfiche and hardcopy of the project reports are available from ERIC Document Reproduction Service, National Cash Register, 4936 Fairmont Ave., Bethesda, Maryland 20014.

   ED 033 614 Final report, MF - $0.50, HC - $4.55

   ED 033 615 Appendices, MF - $1.00, HC - $11.50

   ED 034 092 Teacher's Guide to the Houses Box; Prototype edition, MF - $0.25, HC - $2.15

   ED 034 103 Teacher's Guide to a House of Ancient Greece; Prototype Edition, MF - $0.50, HC - $3.65

   ED 034 106 Teacher's Guide to Imagination Unlimited; Prototype Edition, MF - $0.25, HC - $2.00

   ED 034 102 Teacher's Guide to Japanese Family 1966; Prototype Edition, MF - $0.50, HC - $3.40

   ED 034 096 Teacher's Guide to Medieval People, A Dramatic study; Prototype Edition, MF - $0.25, HC - $2.30

   ED 034 094 Teacher's Guide to Netsilik Eskimos; Prototype Edition, MF - $0.25, HC - $2.80

   ED 034 101 Teacher's Guide to Paddle-to-the-Sea; Prototype Edition, MF - $0.50, HC - $3.45

   ED 034 098 Teacher's Guide to the Algonquins; Prototype Edition, MF - $0.50, HC - $4.65

   ED 034 104 Teacher's Guide to the City; Prototype Edition, MF - $0.25, HC - $2.90

B. Materials and Activities for Teachers and Children (MATCH) (Cont.)

5. These kits represent innovative approaches to multi-media units of material which are at once intellectually rich and flexible enough to allow different exploratory approaches by teachers and students to many aspects of our culture and the environmental-human dimension of other cultures.

C. People and their Environment: Teachers' curriculum guides to Conservation Education.

1. South Carolina Conservation Curriculum Improvement Project, 1968-69, Department of Education, State of South Carolina. Edited by Matthew J. Brennan and supported by a grant from the Belle W. Baruch Foundation.
2. K-12; subject orientation emphasizes science; however, social science and humanities units are included. Guides for teachers on introducing environmental and conservation education through different subjects at various grade levels.
3. Materials: Eight guides in the series: Grades 1,2,3; Grades 4,5,6; Grades 7,8,9 - Science; Grades 7,8,9 - Social Studies; Grades 10,11,12 - Social Studies; Grades 1-12, Outdoor Laboratory; Grades 9-12, Home Economics; Grades 9-12, Biology.
4. Available from: J. G. Ferguson Publishing Company, 6 North Michigan Avenue, Chicago, Illinois 60602 All eight guides have been published.
5. This is a program for action which has good, if not always very exciting, materials which can be worked into the curriculum. Each lesson is self-sustaining, starting with concepts and ending with ways to develop the concepts in the classroom. There is a three-concept scheme throughout: living things are interdependent with one another and the environment; organisms (or populations of organisms) are the product of their heredity and environment; organisms and their environments are in constant change. These concepts can be applied to almost any discipline. Environmental change, interdependence, and energy cycles have implications in social science.

D. Environmental Studies project (ES)

1. Robert Samples and William Romey, Co-Directors. Funded by National Science Foundation.
2. Grade 3 through junior college.
3. Materials: Experimental packets of material for the teacher. Each packet contains one guide to each of 25 approaches to the study of the immediate environment. Two packets available as of November, 1970.
4. Available from: Environmental Studies project, Box 1559, Boulder, Colorado 80302. A newsletter is also available from this address: SO 000 252, MF - $0.25, HC - $0.65
5. ES is not producing a curriculum but rather materials to help teachers add environmental experiences to their existing curricula. Each guide is a "lesson card" containing suggestions on how to start students along a line of inquiry in studying the environment. Much of the activity suggested occurs outside the school building. Often the students work in small groups.

   Every approach provides intrinsic motivation for students. The project directors stress that the teacher has autonomy too, and must decide how to use this resource along with the other resources available to him. The experiences were designed for inner-city school settings but would be widely useful. Financing for the development of additional packets is expected.

F. Report of the Conference of African Educators (The Local Market as a Focus of Activity)

1. Education Development Center (EDC), Newton, Massachusetts, and The Centre for Curriculum Renewal and Educational Development Overseas (CREDO), London, England.
2. K-12; social studies, broadly conceived, with strong input on environment.
3. Materials: A description of "The Local Market as a Focus of Activity" (Annexure to Appendix E) and of "Resources and Materials" (Appendix H) are easily adaptable to U.S. needs.
4. Information available from:
   a. African Social Studies Program
      P.O. Box 4777
      Nairobi, Kenya
   b. The Centre for Curriculum Renewal and Educational Development Overseas
      Tavistock House South
      Tavistock Square, London, W.C.1, England
   c. Education Development Center
      55 Chapel Street, Newton, Massachusetts 02160
   d. The report is available as an ERIC Document, SO 000 254 from the ERIC Document Reproduction Service (EDRS)
      National Cash Register Company
      4936 Fairmont Avenue
      Bethesda, Maryland 20014
      MF - $0.50; HC - $3.90

   The recommendations included are being carried out in some of the eleven participating African countries, with consultative advice from EDC and CREDO.
5. This report contains an excellent rationale for social-environmental studies and useful appended reports. Despite the different cultures for which this report was intended, the suggestions are usually apt for the U.S. and beautifully stated. A stimulating document.

F. Mountain View Center for Environmental Education

1. Sponsored by the Ford Foundation and associated with the University of Colorado Department of Integrated Studies. Co-Directors: Dr. and Mrs. David Hawkins.
2. Basically for elementary schools.
3. Materials: New project.
4. Information available from: Mountain View Center for Environmental Education, 1441 Broadway, Boulder, Colorado 80302.

   Future: Plan to work up ideas for teachers and children; conduct workshops, develop interdisciplinary techniques and attitudes for the environment.
5. The Directors state that the Center holds firm ideas about ways in which children and teachers can make use of the environment in which they live. They use the term "environment" in the very broadest sense to include the inanimate, the animate, and the human environments. These are coupled, through the observation of children's work, with the whole curriculum, the whole range of educationally important subject matter. Local environments vary. The initiative for exploring and using their resources must be local and must evolve through the work of children and teachers and those who support them.

Dr. and Mrs. Hawkins have long experience with elementary education. Their program is to develop ideas from all fields, including various cultural adaptations to the environment represented by Indians, Mexican-Indians, etc. It would be well worthwhile to watch their progress as they implement plans to create a "drop-in" atmosphere involving all people of the community, children and adults.

II. Programs which help the child to understand the interplay between humans and their environment. Cultural patterns are vital in our environmental dealings, and are in fact another dimension of our environment.

A. Families Around the World

1. Department of Elementary Education, University of Connecticut, Vincent R. Rogers, Chairman.
2. Elementary school, K-3, social studies.
3. Materials: 12 color pictures mounted on 6" x 23" cards and a teacher's guide for each packet.

Living in the United States
Living in Kenya
Living in Japan
Living in Brazil
Living in France
Living in Soviet Union
Living in Mexico
(Others should be available September 1971.)

"The teacher's guide has background introduction for each picture and suggests ideas for introductory discussions, picture presentations and follow-up discussions and activities which might last for three weeks. There is also a reference section with lists of source materials for teachers who may wish to further develop ideas and concepts introduced in the packet."

4. Available from: Silver Burdette Company, Division of General Learning Corporation, 250 James Street, Morristown, New Jersey 07960
5. Very creative on cultural diversity in environmental adaptations. Highly flexible materials.

B. Our Working World Social Studies Series

1. Science Research Associates; Author - Lawrence Senesh.
2. Elementary --social studies - economics - political science - anthropology - geography - architecture - planning - history.
3. Materials: Student text, workbook, records, filmstrips, teachers' resource book. Course materials for grades 1,2,3: "Families at Work," "Neighbors at Work," "Cities at Work." are in print.
4. Available from: Science Research Associates, Inc., 259 East Erie Street, Chicago, Illinois 60611
   Materials for grades 4,5,6 are planned for publication in 1971.
5. Varied media and teaching strategies are used with the full range of social studies subject matter including the role of the individual in the family, as change agent, and with developmental and growth problems in the city. Students gain a sense of participation in change toward better future cities and learn important concepts about the individual in the man-made environment.

C. Man: A Course of Study (MACOS)

1. Social Studies Curriculum Program of Education Development Center, Cambridge, Massachusetts, under grants from NSF. Course Director: Peter B. Dow.
2. One-year course for upper elementary grades.
3. Materials: Ethnographic film studies, games, and booklets, plus teacher guides.
4. Available (only after participation in workshops for teachers) from the publisher: Curriculum Development Associates, Inc., Suite 414, 1211 Connecticut Avenue N.W., Washington, D.C. 20036.

   Other related courses are under way.
5. MACOS is based on three questions: What is human about human beings? How did they get that way? How can they be made more so?

   Exploratory materials concern the roots of man's social behavior through the study of selected animal groups and an intensive examination of a remote society very different from our own.

   This course explores, in human terms, some basic ecological considerations about man and animals in the web of their relationships to their environment. The materials are elegant and exciting, but the approach is overly prescribed.

D. Geography in an Urban Age (HSGP)

1. High School Geography Project, sponsored by the Association of American Geographers. Funded by the Ford Foundation and the National Science Foundation.
2. Intended for early secondary school. Subject matter is representative of modern geography, mostly social studies but some natural science.
3. Materials: A year-long course made up of six units with complete teaching materials --student resources, workbooks, teacher's guides, filmstrips, phonograph records, transparencies, maps, air photos, games:

   Geography of Cities
   Manufacturing and Agriculture
   Cultural Geography
   Political Geography
   Habitat and Resources
   Japan

4. Available from: The Macmillan Company, 1066 Third Avenue, New York, New York 10022. An historical analysis of the Project is abstracted in Research in Education, January 1971 and is available from University Microfilms, Ann Arbor, Michigan: SO 000 257.
5. One of the central themes in geography is "Man/land" or "Man in his environment." Whether the subject matter is urban or rural, political, economic or cultural, the environmental perspective is present. Teaching strategies suggested are varied, many involving inquiry, small groups, role-playing and the like.

   Teachers interested in environmental subject matter will want to consult particularly the "Habitat and Resources" unit and selected activities in the "Geography of Cities" and "Manufacuring and Agriculture" units.

E. Anthropology Curriculum Study Project (ACSP)

1. Sponsored by the American Anthropological Association. Mainly funded by NSF. Director: Dr. Malcolm Collier (Mrs.)
2. High School. Mainly concerned with social anthropology.
3. Materials: "Patterns in Human History," a semester course. "History as Culture Change," a three-week sample of above. Filmstrips included and tactile materials (stones and bones).
4. Available from: Crowell Collier and MacMillan, Inc., 909 Third Avenue, New York, New York 10022.
5. The Project has existed throughout most of the sixties and the final manuscripts are now being completed. The material looks for "general significance and pattern" in human societies. "Some of these patterns are evolution, culture as adaptation, and the process of cultural change." The inductive method is encouraged. Students have found the material relevant to their concerns. Materials are easily used and adapted by teachers and students.

The problems of man's interplay with his environment are constantly stressed. Examination of the Kwakiutal Indians of British Columbia and of other Indian groups yields data on settlement forms, social organization, and the process of valuing. The river valley civilization study fits well with geographical data. Final sections deal with the problems of modernizatior throughout the world.

F. Sociological Resources for the Social Studies (SRSS)

1. Sponsored by the American Sociological Association, funded by NSF. Director: Robert Angell.
2. Secondary School --11th and 12th grades, some utility for other grades.
3. Materials: Three kinds of materials are being developed: episodes, paperbacks, and a one-semester course. Episodes are sets "of instructional materials designed to provide the high school student a brief, but dramatic and enlightening firsthand encounter with sociological data." They include both student and teacher materials. The paperbacks are made up of important sociological work rewritten for high school students. A one-semester course, "Inquiries in Sociology," is now being piloted.
4. Information available from: Sociological Resources for the Social Studies, Ann Arbor, Michigan. Published material may be purchased from the nearest Allyn and Bacon sales division. Several episodes and paperbacks are already available, with more expected soon. The semester course is planned for publication as a hand-bound text in January 1972. Reports on this project are available from ERIC Document Reproduction Service (EDRS), National Cash Register, 4936 Fairmont Avenue, Bethesda, Maryland 20014: SO 000 240 (MF - $0.25, HC - $0.45), SO 000 241 (MF - $0.25, HC - $0.50), SO 000 245 (MF - $0.25, HC - $0.40), SO 000 246 (MF - $0.25, HC - $0.55), SO 000 247 (MF - $0.25, HC - $0.40).
5. As many have noted, the environment is less what it is, than what we <u>think</u> it is. We form many of our ideas out of our human interplay, and this program helps to provide an understanding of the social matrix in which we operate. Moreover, the program is useful because it offers teachers alternate routes and provides exciting materials which help the student to

F. Sociological Resources for the Social Studies (SRSS)

5. (Cont.)

inductive reasoning, while still providing sufficient support to teachers. Subject matter on the environment is most prominant in the episode The Changing Face of American Science and the paperback Cities and City Life.

G. Simpolis

1. C. Abt Associates, Inc.
2. High school and adult. Decision-making on urban problems.
3. Materials: A game with roles, maps, and teaching manual.
4. Available from: C. Abt Associates, Inc., 55 Wheeler Street, Cambridge, Massachusetts 02138
5. Educational games have become important teaching instruments in the last decade. They add excitement and variety to the classroom experience and are especially important in involving students in problem-solving.

   Some games are too complicated for standard classroom use. Many deal with non-environmental subject matter. A few are included in materials already cited as in Section II, C --Geography in an Urban Age and Section II, D --Man: A Course of Study.

   In this game, players deal with seven urban problems, three of which relate directly to the environment: pollution, transportation, and housing.

   Abt Associates have been pioneers in educational gaming.

   They are a major source of information for teachers and curriculum developers.

III. Programs Emphasizing Field Work

A. Committee on Public Education of the American Institute of Architects. (COPE)

1. American Institute of Architects.
2. Compilation of projects K-12 and college all over the U.S. involving architectural planning and related ideas, and often involving the active participation of professional architects and planners.
3. Contents include synopses of:
    a. Communicating Environmental Education: For Design Professionals.
    b. Communicating Environmental Education: For Educators.
    c. Indices: Projects, Instructional Materials -- books, articles, films
4. Information available from: American Institute of Architects, 1735 New York Avenue N.W., Washington, D.C. 20006

    This compendium is soon to be updated and expanded. Order from ERIC Document Reproduction Service (EDRS), National Cash Register, 4936 Fairmont Avenue, Bethesda, Maryland 20014: SO 000 258 (MF - $0.75, HC - $7.30).
5. This compendium is extremely useful to social studies teachers. Some of the projects noted are included in this survey. Others deserve careful attention. To a far greater extent than usual, projects involve field work, films, and the active and meaningful cooperation of community professionals with schools.

    The planning field is vital to environmental concerns both for its aesthetic conerns and for the skills it imparts about ordering our communities. With a due sense of concern for ecological constraints, this type of organization of the academic program is significant for training children better to understand how to create together a more livable, beautiful, and functional world.

B. Environmental Education Program

1. Ann Arbor, Michigan, Public Schools. William Browning, Coordinator.
2. Grades K-12, interdisciplinary program including social studies.
3. Materials: There were three components in this program: 1) teacher education; 2) multimedia instructional units; 3) field trips. The program is now an integral part of the Ann Arbor Public Schools.
4. Information available from: William Browning, Ann Arbor Board of Education, 1220 Wells Street, Ann Arbor, Michigan 48104. Mimeographed copies of the first edition, "Integrating Conservation Education in Existing Curriculum of the Ann Arbor Public Schools, K-12" are available. The revised edition published by Burgess Publishing Company is out of print. The original curriculum design by Stapp, 1964, is available from ERIC Document Reproduction Service (EDRS), National Cash Register, 4936 Fairmont Avenue, Bethesda, Maryland 20014: SO 000 251 (MF - $0.25, HC - $2.35).
5. This program was initiated by Professor William Stapp, School of Natural Resources, University of Michigan. It is sequential and concerned with the environment and the community, both local and national. It works toward student involvement and field experience. The emphasis is on attitude development to enable students to become responsible, decisive citizens.

   Dr. Stapp's students have set up similar programs in other communities. Inquiries may be addressed to Wesley Willink, Yarmouth, Maine, and to JoAnn Burgess, Utica, Michigan.

C. Education for Survival: Concepts, Facts, Illustrations, Aids, and Activities.

1. The North Jersey Conservation Foundation, developed in cooperation with the staff of the Madison, New Jersey, Public Schools.
2. Grades 1,2,3; subjects: Environmental control, social studies, and science.
3. Materials: Teacher's curriculum guide covering fields noted above.
4. Available from: North Jersey Conservation Foundation, 300 Mendham Road, Morristown, New Jersey 07960. Make checks payable to it. Cost: $3.75 per copy (including postage and handling).
5. Included here as an example of a local project not requiring large-scale funding, which could be emulated in other locales.

D. Curriculum Development Project on Environmental Studies

1. British Schools Council; Project Director: Melville I. Harris.
2. Environmental Studies, largely based on the Nuffield Junior Science Curriculum, but with applications to social science.
3. Materials: Units and supporting materials.
4. Information available from: Melville I. Harris, Director, Curriculum Development Project on Environmental Studies, Cartrefle College of Education, Wexham, Denbighshire, Wales, U.K.

   Work is in progress.
5. This program is included because of its excellent development of inductive education materials fully utilizing the possibilites of field work in a manner rare (especially in social studies) in the U.S.

   It should be noted that Europeans are greatly interested in environmental education and are gradually moving from biology and outdoor education into social science concerns. Programs from Europe and the developing nations can often be identified by inquiries to:

   Dr. Jan Cerovsky
   Education Executive Officer
   Internation Union for the Conservation of Nature
   and Natural Resources
   1110 Morges
   Switzerland

E. Boise Environmental Education Project (BEEP)

1. Sponsored by the Ford Foundation. The Portland, Oregon, School system is fully committed to the concept and plans eventual funding.
2. The program is for K-8, but emphasizes grades 6-8. 650 children are involved.
3. The City is the classroom. Field experiences are used to impart communications skills and social studies and research techniques based upon inter-relationships with the total environment.
4. Information about curricula design and presentation available from: Boise Environmental Elementary School, Operation BEEP, 620 Fremont, Portland, Oregon 97220. Publications available September 1970 are the objectives and project resume. Operational reports will be available as the project develops. Write the Coordinator: Mrs. Bobbie Nunn.

   Workshops were held for parents and teachers in summer 1970. The program actually went into operation in October 1970.
5. This program represents a creative attempt to integrate children and their environment to provide a total experience. Most of the children are from deprived neighborhoods and most are black.

   The project has two main foci: First, the children have bought a substandard house and they will learn basic skills by getting it in shape. The children have been involved in the negotiations to purchase the house, and are estimating wholesale versus retail prices for things needed. They work with city planners and all neighborhood development organizations and Model Cities personnel, as well as all local community organizers. Vans are provided to take the people back and forth.

E. Boise Environmental Education Project (BEEP)

5. (Cont.)

There are study areas for each grade involving the whole school in which ecology, landscape, and architectural design and related fields are taught.

Second, the second semester will be taught entirely in the community with children involved in groups of no more than six. In addition to regular "unit leaders" from the school, members of the teacher corps and others will teach, which will make for a community-school-based program. Fifty students from Jefferson High are also working with the younger students in the program. Some students act as tutors to younger children. Seven contractors and assistants are involved.

F. Chicago Public High School for Metropolitan Studies (Metro)

1. Chicago Public Schools.
2. Experimental four-year "high school without walls."
3. One hundred and fifty students from all schools in the city, reflecting the diversity of Chicago's population in background, interests, and achievements. Uses real-life situations of city institutions and professionals in interdisciplinary programs involving students' own decision-making.

   Three-part program including:

   a) Units, studied in institutions other than the school.

   b) Courses, such as English, taught by Metro teachers.

   c) Counseling groups as core of the program, with 15-20 students each meeting four hours per week.
4. Information available from: Dr. Thomas Wilson, Chicago Public High School for Metropolitan Studies, 537 Dearborn Street, Chicago, Illinois 60605. Reports on project planning and the school operation are available as of September 1970, materials are being developed. Future expansion is planned.
5. This school, modeled on the famous Philadelphia Parkway Program, offers a unique opportunity for environmental education. The actual city itself is available for study through many of its public and private institutions including natural history museums, planning offices, and city government. Moreover, the program is intentionally multi-disciplinary, offering students great variety, yet maintaining the focus of their own counseling groups.

IV. Values and Ethics: Programs in Law, Politics, and Economics.

A. Program on Civic Education and Law

1. UCLA Law school, Committee on Civic Education.
2. Middle and upper elementary grades. Civics and law with considerable attention to conflicts on environmental issues.
3. Materials: Case Books and Teachers Guides. Three sets are available in 1970: "Your Rights and Responsibilities as an American Citizen," "Conflicts, Politics, and Freedom," and "Voices for Justice: Role Playing in Democratic Procedures."
4. Information available from: Committee on Civic Education, Law School 3129, University of California, Los Angeles, California, 90024

   Materials available from: Ginn and Company, Staler Building, 125 Second Avenue, Boston, Massachusetts 02154.
5. These materials help children to understand how they function within the formalities of the law and how to handle conflict in their own lives. Some issues are specifically environmental. One is a case study of the use of the Great Swamp in New Jersey. Others concern conflicts over a nuclear power plant for New York City, and the development of the Grand Canyon. There is a public hearing on Storm King Mountain and a Senate debate on the "Problem of Hunger in America."

B. ECON 12

1. San Jose State College, Economics Education Center. Supported by Office of Education and Joint Council on Economic Education. Senior Author: Suzanne Wiggins Helburn.
2. Senior High School. Economics with political and social implications.
3. Materials: Teacher's guide and text with readings, data books, and programmed instruction.
4. Information available from: Addison-Wesley Publishing Company, 2725 Sand Hill Road, Menlo Park, California 94025. To be published in 1971.

   Experimental versions are available from the ERIC Document Reproduction Service (EDRS), National Cash Register, 4936 Fairmont Avenue, Bethesda, Maryland 20014: ED 040 100 (MF - $1.25; HC - $16.10); ED 040 101 (MF - $1.50, HC - $18.50).
5. Earlier lessons focus mainly on the skills of economic analysis, although lesson 2 includes a role-playing activity based on congressional hearings on the population problem in the United States. Lesson 4 deals with the economics of pollution including "the tragedy of the commons," external costs, and alternative government policies for the reduction of pollution. Lesson 5 deals with personal values, national goals, and priorities, including readings on "The Theology of the Earth" and "The Land Ethic."

C. The Charles P. Schwartz Citizenship Project

1. Graduate School of Education, University of Chicago. Director: Professor Mark M. Krug.
2. High School --Citizenship education with emphasis on the manner in which our government functions.
3. Materials: A number of units are available in case study form.
4. Information available from: The Charles P. Schwartz Citizenship Project, Graduate School of Education, University of Chicago, 5811 S. Kenwood Avenue, Chicago, Illinois 60637.
5. A unit on pressure groups, taking air pollution action as a focus, is in preparation. This unit will be a provocative addition to social studies information on how the individual can do something about the pollution problem.

E. Population Education

1. The Population Reference Bureau, with support from the Ford Foundation, the Pathfinder Fund, and the Population Council.
2. Activities will be produced at most grade levels and in most social studies fields.
3. Materials: A bulletin, Population Education, Challenge of the 70's, is now available. Some graphs, charts, and other data can also be supplied.
4. Information and materials available from: Population Reference Bureau, 1755 Massachusetts Avenue N.W., Washington, D.C. 20036.

   Inquiries may also be addressed to: Dr. Noel-David Burleson, Carolina Population Center, University of North Carolina, Chapel Hill, North Carolina 27514.
5. Population education is clearly one of the most important facets of our environmental situation. While some aspects are fairly technical, family planning does in fact relate closely to social and cultural views, and will not be successfully implemented except in that context.

   The Population Reference Bureau has information and addresses concerning population activities by various U.S. teachers and educational agencies.

   Dr. Burleson and his students at Harvard and North Carolina have been developing units for use in high schools, mainly for developing countries. Some are provocative for use in the United States.

E. Spaceship Earth Curriculum Project

1. Center for Curriculum Design, Kendall College, Evanston, Illinois. Director: Noel McInnis.
2. Potentially undergraduate and high school --interdisciplinary.
3. Materials will include a variety of media and formats developed to change perception of the environment.
4. Information available from: Spaceship Earth Curriculum Project, Center for Curriculum Design, Kendall College, Evanston, Illinois 60204.
5. A Freshman Integrative Studies Program now in progress at Kendall College provides a working laboratory for concepts and practices in this program.

   A planning conference is tentatively scheduled for 1971.

   Future plans include "setting up an annotated directory, Thinking the World Together, of persons, projects, and media which are helpful in the development of a planetary perspective." It will contain conceptual frameworks and activities, and, it is hoped, both support and stimulate new activities.

NOTES

1. Alfred North Whitehead. The Aims of Education and Other Essays (New York: Macmillan Co., 1929), p. 50.

2. Frank G. Nicholls (Deputy Director General, I.U.C.N.), James L. Aldrich (Consultant, President's Council on Environmental Quality), and Martha T. Henderson.

3. Conference of African Educators, Report, Conducted by the Education Development Center (EDC) and Centre for Curriculum Renewal and Educational Development Overseas (CREDO), Mombasa, Kenya, 1968.

4. David Wolsk, "Education as Assistance in Child Development" (unpublished). Dr. Wolsk is an American working at the University Institute of Neurophysiology, Juliane Maries Vej 36, 2100 Copenhagen, Denmark.

5. Ibid. (referring to Jean Piaget).

6. Edward A. Ames, Schools and the Environment (New York: Ford Foundation, 1969), p. 11.

7. Abraham H. Maslow, "Education Through Art for the Development of Human Potential" (Paper delivered at a Conference on Community School Commitment, St. Louis, Missouri, May 1970), p. 2.

8. See Lynton Keith Caldwell, Environment: A Challenge to Modern Society (New York: Natural History Press, 1970).

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Krug, Mark M., Poster, John B., and Gillies, William B. The New Social Studies: Analysis of Theories and Materials. Itasca, Ill.: F. E. Peacock Publications, 1970. A very helpful compendium.

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Powell, Thomas F., ed. Humanities and the Social Studies. Washington, D.C.: National Council for the Social Studies. National Education Association, 1970. Bulletin no. 44.

Richardson, Elwyn S. In the Early World. New York: Pantheon Books, 1969. Account of teaching Maori and Anglo-Saxon children in one-room school in rural New Zealand. Well-written, sensitive story of child-centered structured program using arts and pottery-making as a core for discussing their world.

Rogers, Vincent R. Teaching in the British Primary School. Toronto: Macmillan Co., 1969. Useful account and analysis of educational practices and ideas which are of growing influence in U.S. education.

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U.S. 91st Congress, 2nd Session. H.R. 14753: Environmental Quality Education Act of 1970. Washington, D.C.: House Committee on Education and Labor, Select Education Subcommittee, 1970.

PERIODICALS AND SERIES WITH ENVIRONMENTAL EDUCATION INFORMATION

American Education, Superintendent of Documents, Washington, D.C. 20402 $7 per year. Published by the U.S. Office of Education 10 times a year. Many helpful illustrated articles on various themes often related to innovative environmental projects.

Big Rock Candy Mountain, Portola Institute 1115 Merrill Street, Menlo Park, California 94025. $8 per year. Seeks to help the reader gain knowledge of himself, by providing resources. Delightful, stimulating, and helpful.

Change Magazine, 59 East 54th Street, New York, New York 10022. $8.50 per year. A higher education magazine emphasizing innovation. Useful ideas in environmental education.

Concern Series of Silver Burdette, General Learning Corp., Morristown, New Jersey. Excellent series with provocative topics.

Conservation Foundation Newsletter, Conservation Foundation, 1717 Massachusetts Ave., Washington, D.C. $6 per year. A valuable report on environmental issues.

Educational Leadership, Association for Supervision and Curriculum Development, NEA, 1201 16th Street, Washington, D.C. 20036. $6.50 per year.

Environment and Behavior, Sage Publications, Inc., 275 South Beverly Drive, Beverly Hills, California 90212. $5 per copy, quarterly. Brought into being to report rigorous experimental and theoretical work focusing on the influence of the physical environment on human behavior at the individual, group, and institutional levels.

Environmental Education (USA), Dembar Educational Research Services, Box 1605, Madison, Wisconsin 53701. $7.50 per year. Contains useful articles, many scientific in orientation.

PERIODICALS AND SERIES WITH ENVIRONMENTAL EDUCATION INFORMATION (Cont)

IUCN Bulletin, International Union for Conservation of Nature and Natural Resources, 1110 Morges, Switzerland.

IUCN Newsletter, Same. Editor: Dr. Jan Cerovsky. Contains articles on conservation education.

Kaiser Aluminum Newsletter, Public Affairs Dept., Kaiser Aluminum & Chemical Corp., Kaiser Center 866, Oakland, California 94604. Single copies free.

Looking and Seeing, Ginn & Co., 18 Bedford Row, W.C.1. DCL, London, England. Excellent series on perception of form, space, and other factors in the urban environment.

Natural History, American Museum of Natural History, Central Park West and 79th Street, New York, New York 10024. $7 per year. Occasional useful articles in social science area.

New Society; The Social Science Weekly, Cromwell House, Fulwood Place, High Holborn, London, W.C. 1, England. $12 per year. A weekly publication which presents brief and interesting views of problems and opportunities of 20th Century society.

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This Magazine Is About Schools, Robert Davis, ed., Box 876, Terminal A, Toronto 1, Ontario. $3.50 per year, quarterly. Very stimulating commentary on innovations in education.

Trends in Education, Gt. Brit., Department of Education and Science, Curyon Street, London, W. 1, England. A survey of projects, curricula, and problems.

PERIODICALS AND SERIES WITH ENVIRONMENTAL EDUCATION INFORMATION (Cont)

Where?, Advisory Centre for Education, 32 Trumpington Street, Cambridge, England. Bimonthly. Useful for ideas on educational philosophy and practice.

Whole Earth Catalogue, Portola Institute, 558 Santa Cruz Avenue, Menlo Park, California 94025. Purpose is to help reader know what is worth getting and where and how to get it.